66.015

Antibacterial and Antifungal Activity of Different Honeys

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Keywords: Antibacterial; Wild bee; Agar dilution; Medihoney®

Background: With the irrational and massive use of Antibiotics in underdeveloped and developing countries, resultantly there was increased Resistance to Antibiotics and with the increased interest in herbal medicine and use of honey for various therapeutic purposes has led to the search for new antibacterial honeys. Hence a study was conducted to assess the antibacterial and fungicidal activity of six honeys locally produced under natural and farm environment and their comparison with the commercially available therapeutic honeys (including Medihoney® and rewa rewa honey).

Methods: An agar dilution method was used to assess the activity of honeys against 15 bacteria and one yeast. The honeys were tested at eight concentrations ranging from 1% to 50%.

Results: All 15 bacteria were inhibited by all honeys used in this study with only the yeast Candida albicans not inhibited by the honeys at 20%. Little antibacterial activity was seen at honey concentrations <5%, with minimal inhibition at 5%. No honey was able to produce complete inhibition of bacterial growth at concentration up to 20% but with the increase in concentration 40% honey obtained from wild bee produces remarkable inhibition. Although Medihoney® and rewa rewa had the overall good activity but the activity of naturally produced (by wild bee) local honey was even better than those. But the locally produced honeys by commercial beekeepers had poor inhibitory activity for some, but not for all bacteria.

Conclusions: Honeys other than those commercially available as antibacterial honeys can have equivalent antibacterial activity if they produced through hygienic methods. The newly identified antibacterial honeys may prove to be a valuable source of future therapeutic honeys.

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Multicenter Evaluation of Tigecycline: An in Vitro Update Against Clinical Pathogens from Japan (2006—2007)

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Background: Tigecycline, a novel glycylcycline class agent (first in class), has been utilized for serious multidrug-resistant (MDR) pathogen infections in several global locations for 1—3 years. This prospective in vitro multicenter trial evaluates nearly 4,000 pathogens from Japan (2006—2007).

Methods: A total of 3,902 isolates (19 medical centers) were processed by reference broth microdilution methods in a single central laboratory. CLSI methods were applied and breakpoints found in CLSI M100-S18 (2008) or USA-FDA Tygacil® package insert were used. The most prevalent organisms were: *S. aureus* (SA; 1,198), *S. pneumoniae* (SPN; 459), *E. coli* and *Klebsiella* (199 each), CoNS (198), *Enterobacters* (197), enterococci (195) and *Acinetobacters* (193). All concurrent QC was acceptable.

Results: Against Gram-positive cocci, tigecycline $MIC_{50/90}$ values were: SA (0.12/0.5 mg/L), enterococci and CoNS (0.12/0.25), SPN (≤0.03/0.06), and β-haemolytic (BHS) or viridans group streptococci (≤0.03/0.06); all susceptible except 3 MRSA (MIC at 1 mg/L). Among Enterobacteriaceae, tigecycline inhibited 100.0, 99.0 and 100.0% of *E. coli*, *Klebsiella* and *Enterobacters* at ≤2 mg/L, respectively. *P. mirabilis* and *S. marcescens* were less susceptible to tigecycline (MIC_{90} range, 1 to 4 mg/L). *Acinetobacters* (193) had MIC values ranging to 4 mg/L; 99.0% at ≤2 mg/L and 1.6% carbapenem-resistant. *P. aeruginosa* were generally tigecycline-resistant (MIC_{90}, >4 mg/L). 14.5% of group B were levofloxacin-resistant (clonal with multiple QRDR mutations in 7 sites). ESBL rates were only 2.0—6.5% in *E. coli* and *Klebsiella*, and fluoroquinolones and trimethoprim/sulfamethoxazole resistances were highest (20.1—21.1%) in *E. coli*.

Conclusions: Tigecycline was observed to be active against nearly all tested species from Japanese medical centers for year 2003—2004 strains, and in this prospective sample report remains similarly active (2006—2007 isolates). Resistant subsets (MRSA, ESBL enteric bacilli, MDR *Acinetobacters*) were generally inhibited at USA-FDA-susceptible breakpoints for tigecycline. Possible use of tigecycline for some serious MDR infections in Japan should be considered.

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Study of Antibacterial Activity of a Green Alga, *Caulerpa Sertularioides* from the Persian Gulf

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Keywords: *Caulerpa sertularioides*; Antibacterial activity; Alga

Background: Development of antibiotic resistance is one of the most common problems in medicine. Thus, discovering of new antibacterial compounds is interesting. Marine algae are rich sources of bioactive metabolites that could be effective as antimicrobial agents. The aim of this in-vitro